SYN series Single Band PICO Repeater

Model : SYN-XYY-S

Where X is system: E for EGSM&GSM, D for DCS1800, W for WCDMA2100, L for LTE800
YY is power: 12, 15, 20, 23dBm

- ✧ Simple Plug-and-Play
- ✧ LED Indication
- ✧ Manual Gain setting
- ✧ ALC Control

Electrical specification		**Uplink**	**Downlink**
Frequency Range	EGSM&GSM900	880~915MHz	925~960MHz
	GSM1800	1710~1785MHz	1805~1880MHz
	WCDMA	1920~1980MHz	2110~2170MHz
	LTE800	832~862MHz	791~821MHz
Max .Output Power		≥10dBm	≥12dBm
		≥12dBm	≥15dBm
		≥15dBm	≥20dBm
		≥15dBm	≥23dBm
Max .Gain		≥60dB	≥65dB
		≥65dB	≥65dB
		≥65dB	≥70dB
		≥70dB	≥75dB
Maximum Input Power		≥0dBm	
MGC (Step Attenuation)		31dB / 1dB step	
Automatic Level Control		≥ 20dB	
Passband Ripple		≤5dB	
Out of Band Gain for GSM system	±400KHz	<50dB	
	±600KHz	<40dB	
	±1MHz	<35dB	
	±5MHz	<25dB	
Intermodulation Products and Spurious Emission for GSM system	9KHz~1GHz	≦ -36dBm	
	1GHz~12.75GHz	≦ -30dBm	
Out of Band Gain for WCDMA and LTE system	2.7≦f_offset＜3.5MHz	<60dB	
	3.5≦f_offset＜12.5MHz	<45dB	
	12.5≦f_offset	<35dB	
Spurious Emission for WCDMA and LTE system	9kHz~150KHz	≦ -36dBm/1 kHz	
	150kHz~30MHz	≦ -36dBm/10 kHz	
	30MHz~1GHz	≦ -36dBm/100 kHz	
	1 GHz ~ Flow - 10 MHz	≦ -30dBm/1 MHz	
	F_L - 10 MHz ~ F_H + 10 MHz	≦ -15dBm/1 MHz	
	F_H + 10 MHz ~12.75 GHz	≦ -30dBm/1 MHz	
ACRR		20dBc/30KHz@±5MHz	
		20dBc/30KHz@±10MHz	
Frequency stability		≤ 0.01ppm	
Error Vector Magnitude		≦ 12.5%	
Peak Code Domain Error		≦-35dB@Spreading Factor 256	
Noise Figure		≤6dB	
V.S.W.R		≤ 2.0	
Group Delay		≤ 5μs	
Power Consumption		≤15W	
Cooling		Heatsink Convection cooling	
LED Alarm			
Power LED		Green @ Normal work	
ALC LED		Orange @ ALC 1~5dB, Red @ ALC 20dB~25dB	
Mechanical Specifications			
I /O Port		N-Female	
Impedance		50 ohm	
Operating Temperature		-10℃~+55℃	
Environment Conditions		IP40	
Dimensions		250*165*52mm	
Weight		≤2.5KG	
Power Supply		Input AC90~264V,output DC9V / 3A	

SYN series Dual-Band PICO Repeater

Model : SYN-ZZYY-S

Where ZZ is system: ED for EGSM&GSM + DCS1800, EW for EGSM&GSM + WCDMA, DW for DCS1800 + WCDMA, LW for LTE800 + WCDMA

YY is power: 12, 15, 20, 23dBm

- ✧ Simple Plug-and-Play
- ✧ LED Indication
- ✧ Manual Gain setting
- ✧ ALC Control

Electrical specification		**Uplink**	**Downlink**
Frequency Range	EGSM&GSM900	880~915MHz	925~960MHz
	DCS1800	1710~1785MHz	1805~1880MHz
	WCDMA	1920~1980MHz	2110~2170MHz
	LTE800	832~862MHz	791~821MHz
Max .Output Power		≥10dBm	≥12dBm
		≥12dBm	≥15dBm
		≥15dBm	≥20dBm
		≥15dBm	≥23dBm
Max .Gain		≥60dB	≥65dB
		≥65dB	≥65dB
		≥65dB	≥70dB
		≥70dB	≥75dB
Maximum Input Power		≥0dBm	
MGC (Step Attenuation)		31dB / 1dB step	
Automatic Level Control		≥ 20dB	
Passband Ripple		≤5dB	
Out of Band Gain for GSM system	±400KHz	<50dB	
	±600KHz	<40dB	
	±1MHz	<35dB	
	±5MHz	<25dB	
Intermodulation Products and Spurious Emission for GSM system	9KHz~1GHz	≦ -36dBm	
	1GHz~12.75GHz	≦ -30dBm	
Out of Band Gain for WCDMA and LTE system	2.7≦f_offset＜3.5MHz	<60dB	
	3.5≦f_offset＜12.5MHz	<45dB	
	12.5≦f_offset	<35dB	
Spurious Emission for WCDMA and LTE system	9kHz~150KHz	≦ -36dBm/1 kHz	
	150kHz~30MHz	≦ -36dBm/10 kHz	
	30MHz~1GHz	≦ -36dBm/100 kHz	
	1 GHz ~ Flow - 10 MHz	≦ -30dBm/1 MHz	
	F_L - 10 MHz ~ F_H + 10 MHz	≦ -15dBm/1 MHz	
	F_H + 10 MHz ~12.75 GHz	≦ -30dBm/1 MHz	
ACRR		20dBc/30KHz@±5MHz	
		20dBc/30KHz@±10MHz	
Frequency stability		≤ 0.01ppm	
Error Vector Magnitude		≦ 12.5%	
Peak Code Domain Error		≦-35dB@Spreading Factor 256	
Noise Figure		≤6dB	
V.S.W.R		≤ 2.0	
Group Delay		≤ 5μs	
Power Consumption		≤25W	
Cooling		Heatsink Convection cooling	
LED Alarm			
Power LED		Green @ Normal work	
ALC LED		Orange @ ALC 1~5dB, Red @ ALC 20dB~25dB	
Mechanical Specifications			
I /O Port		N-Female	
Impedance		50 ohm	
Operating Temperature		-10℃~+55℃	
Environment Conditions		IP40	
Dimensions		250*220*52mm	
Weight		≤4.5KG	
Power Supply		Input AC90~264V,output DC9V / 3A	

Technical data are subjected to change without notice – File: SYN-ZZYY-S datasheet 2016V1.0

SYN series Tri-Band PICO Repeater

Model : SYN-EDWYY-S

Where YY is power: 12, 15, 20, 23dBm

- ✧ Simple Plug-and-Play
- ✧ LED Indication
- ✧ Manual Gain setting
- ✧ ALC Control

Electrical specification		**Uplink**	**Downlink**
Frequency Range	EGSM&GSM900	880~915MHz	925~960MHz
	DCS1800	1710~1785MHz	1805~1880MHz
	WCDMA	1920~1980MHz	2110~2170MHz
Max .Output Power		≥10dBm	≥12dBm
		≥12dBm	≥15dBm
		≥15dBm	≥20dBm
		≥15dBm	≥23dBm
Max .Gain		≥60dB	≥65dB
		≥65dB	≥65dB
		≥65dB	≥70dB
		≥70dB	≥75dB
Maximum Input Power		≥0dBm	
MGC (Step Attenuation)		31dB / 1dB step	
Automatic Level Control		≥ 20dB	
Passband Ripple		≤5dB	
Out of Band Gain for GSM system	±400KHz	<50dB	
	±600KHz	<40dB	
	±1MHz	<35dB	
	±5MHz	<25dB	
Intermodulation Products and Spurious Emission for GSM system	9KHz~1GHz	≦ -36dBm	
	1GHz~12.75GHz	≦ -30dBm	
Out of Band Gain for WCDMA and LTE system	2.7≦f_offset＜3.5MHz	<60dB	
	3.5≦f_offset＜12.5MHz	<45dB	
	12.5≦f_offset	<35dB	
Spurious Emission for WCDMA and LTE system	9kHz~150KHz	≦ -36dBm/1 kHz	
	150kHz~30MHz	≦ -36dBm/10 kHz	
	30MHz~1GHz	≦ -36dBm/100 kHz	
	1 GHz ~ Flow - 10 MHz	≦ -30dBm/1 MHz	
	F_L - 10 MHz ~ F_H + 10 MHz	≦ -15dBm/1 MHz	
	F_H + 10 MHz ~12.75 GHz	≦ -30dBm/1 MHz	
ACRR		20dBc/30KHz@±5MHz	
		20dBc/30KHz@±10MHz	
Frequency stability		≤ 0.01ppm	
Error Vector Magnitude		≦ 12.5%	
Peak Code Domain Error		≦-35dB@Spreading Factor 256	
Noise Figure		≤6dB	
V.S.W.R		≤ 2.0	
Group Delay		≤ 5μs	
Power Consumption		≤25W	
Cooling		Heatsink Convection cooling	
LED Alarm			
Power LED		Green @ Normal work	
ALC LED		Orange @ ALC 1~5dB, Red @ ALC 20dB~25dB	
Mechanical Specifications			
I /O Port		N-Female	
Impedance		50 ohm	
Operating Temperature		-10℃~+55℃	
Environment Conditions		IP40	
Dimensions		250*390*52mm	
Weight		≤7KG	
Power Supply		Input AC90~264V,output DC9V / 3A	

Technical data are subjected to change without notice – File: SYN-EDWYY-S datasheet 2015V1.0

SUNNY 23dBm Band Selective Repeater

Model : SUN-RP23

- *Support Selected Bands in 900, DCS1800 and WCDMA*
- *Simple Plug-and-Play Design*
- *ETSI Compliance*
- *23dBm Per Band*
- *Remote Control By SMS or Data*

Electrical Specifications

Item		Specification	
		Downlink	**Uplink**
Frequency Range	900	925-960MHz (1-3 sub-band)	880-915MHz (1-3 sub-band)
	1800	1805-1880MHz (1-3 sub-band)	1710-1785MHz (1-3 sub-band)
	2100	2110-2170MHz (1-3 sub-band)	1920-1980 ((1-3 sub-band)
Max. Gain		75±2.5dB	70±2.5dB
Max. Output Power		23±1.5dBm	15±1.5dBm
MGS (Step Attenuation)		≥31dB/1dB step	
Automatic Level Control		≥15dB, auto shut off after 15dB	
Gain Flatness	GSM900 & DCS1800	≤4dB (p-p)	
	WCDMA	≤2dB/3.84MHz	
Noise Figure		≤8dB	
V.S.W.R.		≤2.2	
Group Delay		≤8us	
Frequency stability		≤0.01ppm	
Out of Band Interference Signal Per Downlink System (OIS)		-30dBm (Noise Figure ≤22dB, Gain is normal) -25dBm (Noise Figure ≥22 dB, Gain is normal) -20dBm (Noise Figure ≥27 dB Gain is normal) ≥-20dBm (Gain=Gain-(OIS+20))	
Out of Band Gain & Spurious Emission & Output inter-modulation		GSM Meet ETSI TS 151 026	
		WCDMA Meet 3GPP TS 25.143	
WCDMA System	Spurious Emission Mask	Meet 3GPP TS 25.143	
	Modulation Accuracy	≤12.5%	
	Peak Code Domain Error	≤-35dB@Spreading Factor 256	
	ACRR	≥30dBc/30KHz @ ±5MHz ≥50dBc/30KHz @ ±10MHz	

LED Alarm

Power LED	Power Indicator
ALC LED	Orange @ ALC 1~5dB, Red @ALC 15dB~20dB

Software

Local Monitoring	PC via USB Port
Remote Monitoring	Via SMS by GSM/WCDMA Modem
Controlled Parameters	Gain, Frequency, Repeater ON/OFF, Alarm Enable, etc.
Monitoring Parameters	Gain, Frequency, Repeater ON/OFF, Alarm Message, Output power
Alarm Items	Repeater Failure, DC Failure, ALC Alarm, PLL Failure

Mechanical Specifications

I/O Port	N-Female
Impedance	50ohm
Operating Temperature	-25°C ~+55°C
Environmental Condition	IP40
Dimension	410x280x120mm
Weight	≤13.5kg
Power Supply	Input AC90~264V

Technical data are subjected to change without notice – File: SUN-RP23 datasheet 2016V1.0

SUNNY 43dBm Band Selective Repeater – Extension Kit

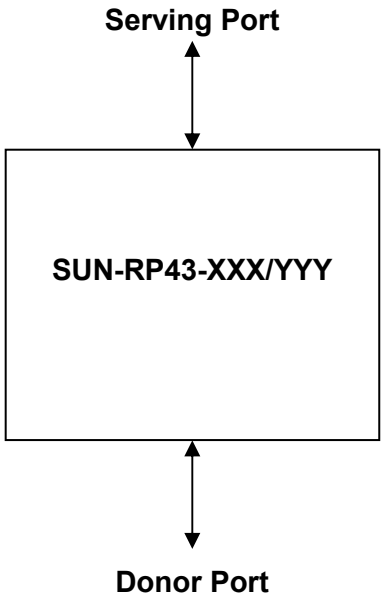
Model : SUN-RP43-AAA/BBB-E

Where AAA or BBB is 900, 1800, 2100, 2600

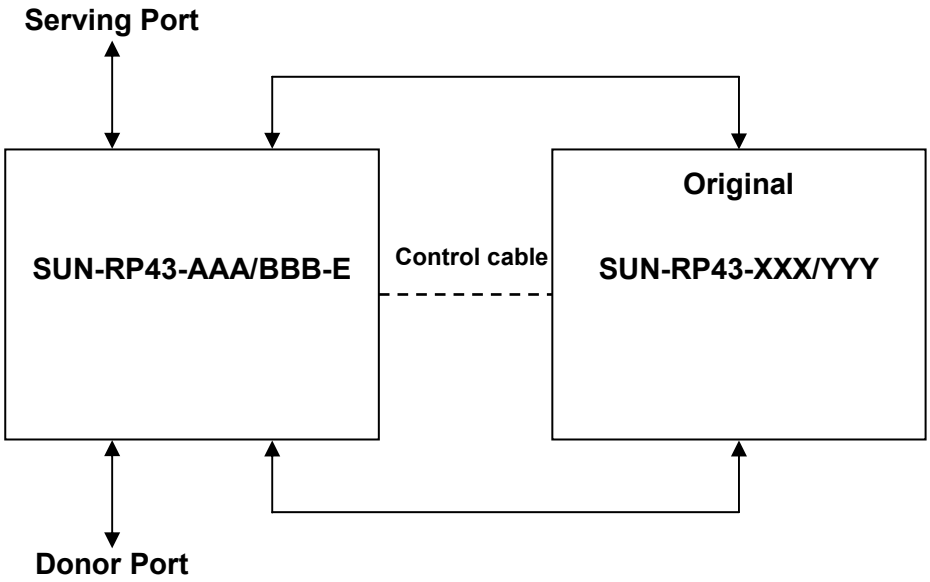
- *Support up to 3 selected sub-bands within GSM900, DCS1800, WCDMA2100, LTE2600*
- *43dBm per band with 90dB gain*
- *Simple plug-and-play design with single or dual bands selection*
- *Able to extend from 2 bands to 3/4 bands*
- *ETSI compliance*
- *Remote control by SMS or data*

Block Diagram

Original 1/2 bands:



Original (1/2bands) + Extension: (3/4 bands)



Technical Specification

Item		Uplink	Downlink
Frequency Range	GSM900	885-915MHz (max 30MHz)	930-960MHz (max 30MHz)
	DCS1800	1710-1785MHz (max 55MHz)*	1805-1880MHz (max 55MHz)*
	WCDMA2100	1920-1980MHz (max 55MHz)*	2110-2170MHz (max 55MHz)*
	LTE2600	2500-2570MHz (max 55MHz)*	2620-2690MHz (max 55MHz)*
Max. Sub-Bands	GSM900	3 (0.2-20MHz per sub-band)	3 (0.2-20MHz per sub-band)
	DCS1800	3 (0.2-20MHz per sub-band)	3 (0.2-20MHz per sub-band)
	WCDMA2100	3 (5/10/15MHz per sub-band)	3 (5/10/15MHz per sub-band)
	LTE2600	3 (0.2-20MHz per sub-band)	3 (0.2-20MHz per sub-band)
Max Gain		90 dB	
Gain Flatness		≤ ±1.5dB（p-p）	
Frequency Error		≤0.05ppm	
ALC Range		≥15dB	
Gain Control Range(MGC)		≥30dB (1 dB step)	
Gain Control Accuracy		1~20dB@±1dB >20dB@±1.5dB	
Total RF Input Power (no damage)		≤-10dBm	≤-10dBm
Output Power		≥20dBm	≥43dBm
Output Power Accuracy		≤+/-3dB@-10°C to +55°C	
Spurious Emission		9KHz~1GHz≤-36dBm 1GHz~12.75GHz≤-30dBm	
Out of band Gain		GSM comply ETSI EN 300 609 at 0.2MHz out of the set bandwidth WCDMA comply ETSI TS 125 143 LTE comply ETSI TS 136 143	
EVM		LTE comply ETSI TS 136 143	
ACRR		LTE comply ETSI TS 136 143	
Noise Figure	GSM900	≤5dB	≤5dB
	DCS1800	≤5dB	≤5dB
	WCDMA2100	≤5dB	≤5dB
	LTE2600	≤5dB	≤5dB
Group Delay		≤6 μsec	≤6 μsec
V.S.W.R		≤1.3	≤1.3
Impedance		50Ω	50Ω
Power Supply		Input 110V-260VAC ,50Hz	
Power Consumption		200W (Single Band), 400W (Dual Band)	
Cooling		Heatsink convection cooling	
Operating Temperature		-25~+55 °C	
RF Connector		N(F)	
Water Proof		IP65	
Dimension		513x460x232 mm	
Weight		30Kg	
MTBF		≥50,000 hours	

* The user needs to define 55MHz Bandwidth within whole band during ordering stage

Ordering Information:

SUN-RP43-AAA-E: confirm the band when placing order, supporting single band only

SUN-RP43-AAA/BBB-E: confirm the bands when placing order, maximum supporting dual bands.

Options:

SUN-OMS: Sunny Remote Control Software

SUN-RP43-900U-E: GSM900 Band upgrade kit

SUN-RP43-1800U-E: DCS1800 Band upgrade kit

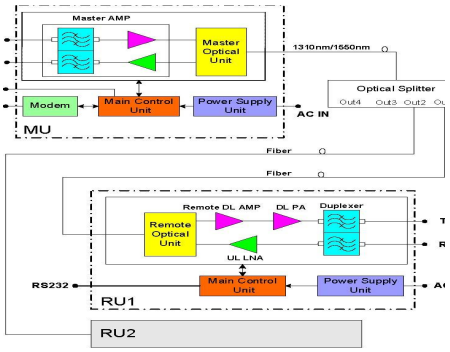
SUN-RP43-2100U-E: WCDMA2100 Band upgrade kit

SUN-RP43-2600U-E: LTE2600 Band upgrade kit

Technical data are subjected to change without notice – File: SUN-RP43-XXX/YYY-E datasheet 2016V1.0

Sunny Fiber Optical Repeater - CDMA800 Full Band 20W

Model: SUN-FOR-C8-FB-20W



Electrical Specifications

Item		Specification	
		Downlink	Uplink
Frequency Range		869-894MHz	824-849MHz
Output Power (Max.)		43±1.5dBm	0±2dBm
Gain (Max.) (with 7dB optic loss)		60±3dB	60±3dB
Max. input without damage		10dBm	-10dBm
NF		--	≤5dB
Gain Adjustable Range/Step		≥25dB/1dB	
Gain Adjustable Error		Gain adjustable range is 0~20dB, error≤1dB; ≥21dB, error≤1.5dB	
Ripple		≤3dB in bandwidth	
Downlink 3rd Order Intercept, OIP3		≥62dBm	--
ACPR	750KHZ	≤-45dBc	
	1.98MHZ	≤-60dBc	
ALC		When adding ≤10dB at max. Output level, output variation ≤±2dB, When adding >10dB, output variation ≤±2dB or be off.	
VSWR		≤1.5	
Time Delay		≤1.0μs	
Spurious Emission		≤-36dBm @9kHz-1GHz ≤-30dBm @1GHz-12.75GHz	

Optical Specifications

Optical Output Power	0~3dBm
Optical length	DL: 1310nm, UL: 1550nm
Optical Loss	≤10dB /Includes the loss of the optical splitter
Optical Connector	FC/APC

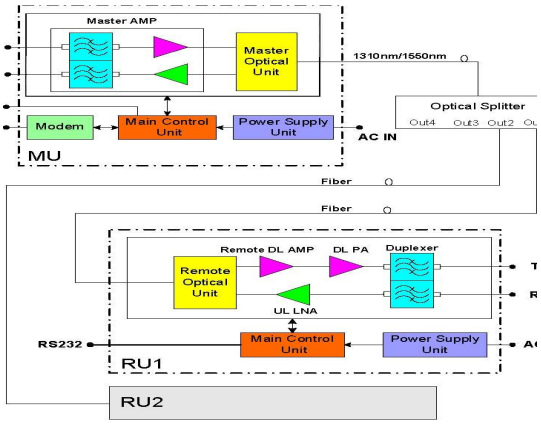
Power Supply and Mechanical Specifications

Model	SUN-FOR-C8-FB-20W-MU	SUN-FOR-C8-FB-20W-RU
Power Supply	AC220V±60V,45~55Hz	
Dimension	435mm*312mm*90mm	500mm*440mm*230mm
Weight	≤8kg	≤30kg
Max. Power Consumption	≤40W	≤300W
Operating Temperature	-5~+45℃	-25~+55℃
Operating Humidity	≤85%	≤95%
Environmental Class	IP20	IP65
RF Connector	N-Female, 50ohm	
MTBF	≥50000 hours	
Monitor Interface	Local Monitor: RS232, Remote Monitor: UMTS modem	

Technical data are subjected to change without notice – File: SUN-FOR-C8-FB-20W datasheet 2016V1.0

Sunny Fiber Optical Repeater – GSM900 Full Band 40W

Model: SUN-FOR-G9-FB-40W



Electrical Specifications

Item	Specification	
	Downlink	Uplink
Frequency Range	935-960MHz	890-915MHz
Output Power (Max.)	46±2dBm	0±2dBm
Gain (Max.) (with 7dB optic loss)	55±3dB	55±3dB
Max. input without damage	10dBm	-10dBm
NF	--	≤5dB
Gain Adjustable Range/Step	≥25dB/1dB	
Gain Adjustable Error	Gain adjustable range is 0~20dB, error≤1dB; ≥21dB, error≤1.5dB	
Ripple	≤3dB in bandwidth	
Downlink 3rd Order Intercept, OIP3	≥65dBm	--
ALC	When adding ≤10dB at max. Output level, output variation ≤±2dB, When adding >10dB, output variation ≤±2dB or be off.	
VSWR	≤1.5	
Time Delay	≤5.0μs	
Spurious Emission	≤-36dBm @9kHz-1GHz ≤-30dBm @1GHz-12.75GHz	

Optical Specifications

Optical Output Power	0~3dBm
Optical length	DL: 1310nm, UL: 1550nm
Optical Loss	≤10dB /Includes the loss of the optical splitter
Optical Connector	FC/APC

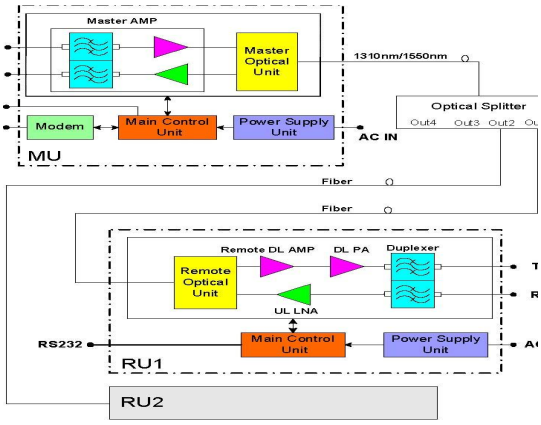
Power Supply and Mechanical Specifications

Model	SUN-FOR-G9-FB-40W-MU	SUN-FOR-G9-FB-40W-RU
Power Supply	AC220V±60V,45~55Hz	
Dimension	435mm*312mm*90mm	500mm*440mm*230mm
Weight	≤8kg	≤30kg
Max. Power Consumption	≤40W	≤300W
Operating Temperature	-5~+45℃	-25~+55℃
Operating Humidity	≤85%	≤95%
Environmental Class	IP20	IP65
RF Connector	N-Female, 50ohm	
MTBF	≥50000 hours	
Monitor Interface	Local Monitor: RS232, Remote Monitor: UMTS modem	

Technical data are subjected to change without notice – File: SUN-FOR-G9-FB-40W datasheet 2016V1.0

Sunny Fiber Optical Repeater – DCS1800 Full Band 40W

Model: SUN-FOR-D18-FB-40W



Electrical Specifications

Item	Specification	
	Downlink	Uplink
Frequency Range	1805-1880MHz	1710-1785MHz
Output Power (Max.)	46±2dBm	0±2dBm
Gain (Max.) (with 7dB optic loss)	55±3dB	55±3dB
Max. input without damage	10dBm	-10dBm
NF	--	≤5dB
Gain Adjustable Range/Step	≥25dB/1dB	
Gain Adjustable Error	Gain adjustable range is 0~20dB, error≤1dB; ≥21dB, error≤1.5dB	
Ripple	≤3dB in bandwidth	
ALC	When adding ≤10dB at max. Output level, output variation ≤±2dB, When adding >10dB, output variation ≤±2dB or be off.	
Downlink 3rd Order Intercept, OIP3	≥65dBm	--
VSWR	≤1.5	
Time Delay	≤5.0μs	
Spurious Emission	≤-36dBm @9kHz-1GHz ≤-30dBm @1GHz-12.75GHz	

Optical Specifications

Optical Output Power	0~3dBm
Optical length	DL: 1310nm, UL: 1550nm
Optical Loss	≤10dB /Includes the loss of the optical splitter
Optical Connector	FC/APC

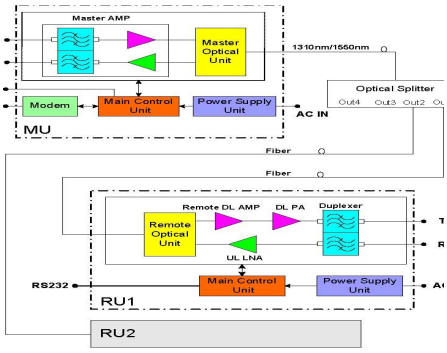
Power Supply and Mechanical Specifications

Model	SUN-FOR-D18-FB-40W-MU	SUN-FOR-D18-FB-40W-RU
Power Supply	AC220V±60V,45~55Hz	
Dimension	435mm*312mm*90mm	500mm*440mm*230mm
Weight	≤8kg	≤30kg
Max. Power Consumption	≤40W	≤300W
Operating Temperature	-5~+45℃	-25~+55℃
Operating Humidity	≤85%	≤95%
Environmental Class	IP20	IP65
RF Connector	N-Female, 50ohm	
MTBF	≥50000 hours	
Monitor Interface	Local Monitor: RS232, Remote Monitor: UMTS modem	

Technical data are subjected to change without notice – File: SUN-FOR-D18-FB-40W datasheet 2016V1.0

Sunny Fiber Optical Repeater – UMTS2100 Full Band 40W

Model: SUN-FOR-U21-FB-40W



Electrical and Mechanical Specifications

Item	Specification	
	Downlink	Uplink
Frequency Range	2110-2170MHz	1920 ~ 1980MHz
Output Power (Max.)	46±2dBm	0±2dBm
Gain (Max.) (with 7dB optic loss)	55±3dB	55±3dB
Max. input without damage	10dBm	-10dBm
NF	--	≤5dB
Gain Adjustable Range/Step	≥25dB/1dB	
Gain Adjustable Error	Gain adjustable range is 0~20dB, error≤1dB; ≥21dB, error≤1.5dB	
Ripple	≤3dB in bandwidth	
ALC	When adding ≤10dB at max. Output level, output variation ≤±2dB, When adding >10dB, output variation ≤±2dB or be off.	
EVM	≤12.5%	
PCDE	≤35dB	
Spurious Emission	≤-36dBm @9kHz-1GHz ≤-30dBm @1GHz-12.75GHz	
ACLR	≥-45dBc @±5MHz ≥-50dBc @±10MHz	
VSWR	≤1.5	
Time Delay	≤5.0μs	
Downlink 3rd Order Intercept, OIP3	≥65dBm	--

Optical Specifications

Optical Output Power	0~3dBm
Optical length	DL: 1310nm, UL: 1550nm
Optical Loss	≤10dB /Includes the loss of the optical splitter
Optical Connector	FC/APC

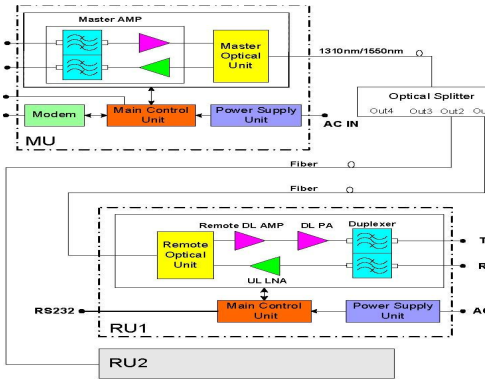
Power Supply and Mechanical Specifications

Model	SUN-FOR-U21-FB-40W-MU	SUN-FOR-U21-FB-40W-RU
Power Supply	AC220V±60V,45~55Hz	
Dimension	435mm*312mm*90mm	500mm*440mm*230mm
Weight	≤8kg	≤30kg
Max. Power Consumption	≤40W	≤300W
Operating Temperature	-5~+45℃	-25~+55℃
Operating Humidity	≤85%	≤95%
Environmental Class	IP20	IP65
RF Connector	N-Female, 50ohm	
MTBF	≥50000 hours	
Monitor Interface	Local Monitor: RS232, Remote Monitor: UMTS modem	

Technical data are subjected to change without notice – File: SUN-FOR-U21-FB-40W datasheet 2016V1.0

Sunny Fiber Optical Repeater – LTE2600 Full Band 40W

Model: SUN-FOR-L26-FB-40W



Electrical and Mechanical Specifications

Item	Specification	
	Downlink	Uplink
Frequency Range	2620~2690MHz	2500~2570MHz
Output Power (Max.)	46±2dBm	0±2dBm
Gain (Max.) (with 7dB optic loss)	55±3dB	55±3dB
Max. input without damage	10dBm	-10dBm
Noise Figure	--	≤5dB
Gain Adjustable Range/Step	≥25dB/1dB	
Gain Adjustable Error	Gain adjustable range is 0~20dB, error≤1dB; ≥21dB, error≤1.5dB	
Ripple	≤3dB in bandwidth	
ALC	When adding ≤10dB at max. Output level, output variation ≤±2dB, When adding >10dB, output variation ≤±2dB or be off.	
VSWR	≤1.5	
Time Delay	≤5.0μs	
Downlink 3rd Order Intercept, OIP3	≥65dBm	--
Spurious Emission	Complies with 3GPP TS 21.143	
Spectrum Mask	Complies with 3GPP TS 21.143	
ACLR	Complies with 3GPP TS 21.143	

Optical Specifications

Optical Output Power	0~3dBm
Optical length	DL: 1310nm, UL: 1550nm
Optical Loss	≤10dB /Includes the loss of the optical splitter
Optical Connector	FC/APC

Power Supply and Mechanical Specifications

Model	SUN-FOR-L26-FB-40W-MU	SUN-FOR-L26-FB-40W-RU
Power Supply	AC220V±60V,45~55Hz	
Dimension	435mm*312mm*90mm	500mm*440mm*230mm
Weight	≤8kg	≤30kg
Max. Power Consumption	≤40W	≤300W
Operating Temperature	-5~+45℃	-25~+55℃
Operating Humidity	≤85%	≤95%
Environmental Class	IP20	IP65
RF Connector	N-Female, 50ohm	
MTBF	≥50000 hours	
Monitor Interface	Local Monitor: RS232, Remote Monitor: UMTS modem	

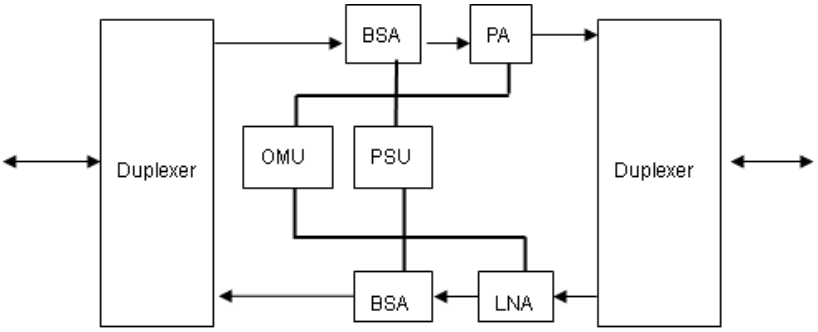
Technical data are subjected to change without notice – File: SUN-FOR-L26-FB-40W datasheet 2016V1.0

Sunny Line Amplifier – GSM900 Full Band 20/40W

Model: SUN-LA-G9-FB-XX

Where XX is 20 or 40

System Diagram:



Electrical Specifications

Item	Specification		
	Downlink		Uplink
Frequency Range	935-960MHz		890-915MHz
Output Power (Max.)	43±2dBm	46±2dBm	0±2dBm
Gain (Max.)	45±3dB	48±3dB	45±3dB (48±3dB for 40W model)
Max. input without damage	10dBm		-10dBm
NF	--		≤5dB
Gain Adjustable Range/Step	≥30dB/1dB		
Gain Adjustable Linear	≤1.0dB @0~20dB ≤1.5dB @21-30dB		
Ripple	≤2dB (200kHz)		
Downlink 3rd Order Intercept, OIP3	≧62dBm	≧65dBm	--
ALC	Input Signal add 20dB △Po≤±1		
VSWR	≤1.5		
Time Delay	≤5.0μs		
Spurious Emission	≤-36dBm @9kHz-1GHz ≤-30dBm @1GHz-12.75GHz		

Power Supply and Mechanical Specifications

Power Supply	AC220V(50Hz)/AC110V(60Hz)
Dimension	500mm*440mm*230mm
Weight	≤30kg
Max. Power Consumption	≤300W
Operating Temperature	-25~+55℃
Operating Humidity	≤95%
Environmental Class	IP65
RF Connector	N-Female, 50ohm
MTBF	≥100000 hours
Monitor Interface	Local Monitor: RS232 Remote Monitor: UMTS modem

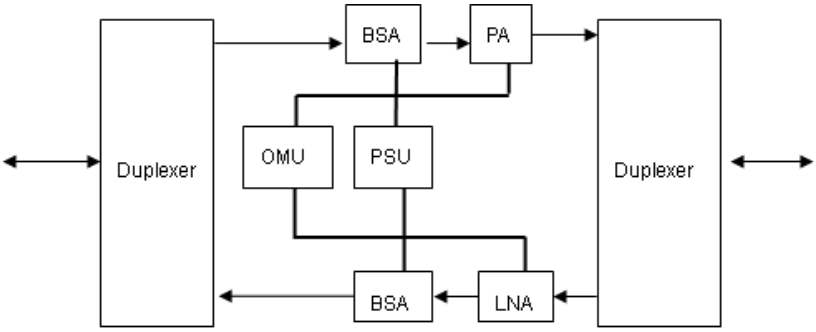
Technical data are subjected to change without notice – File: SUN-LA-G9-FB-XX datasheet 2016V1.0

Sunny Line Amplifier – DCS1800 Full Band 20/40W

Model: SUN-LA-D18-FB-XX

Where XX is 20 or 40

System Diagram:



Electrical Specifications

Item	Specification		
	Downlink		Uplink
Frequency Range	1805-1880MHz		1710-1785MHz
Output Power (Max.)	43±2dBm	46±2dBm	0±2dBm
Gain (Max.)	45±3dB	48±3dB	45±3dB (48±3dB for 40W model)
Max. input without damage	10dBm		-10dBm
NF	--		≤5dB
Gain Adjustable Range/Step	≥30dB/1dB		
Gain Adjustable Linear	≤1.0dB @0~20dB ≤1.5dB @21-30dB		
Ripple	≤2dB (200kHz)		
Downlink 3rd Order Intercept, OIP3	≥62dBm	≥65dBm	--
ALC	Input Signal add 20dB △Po≤±1		
VSWR	≤1.5		
Time Delay	≤5.0μs		
Spurious Emission	≤-36dBm @9kHz-1GHz ≤-30dBm @1GHz-12.75GHz		

Power Supply and Mechanical Specifications

Power Supply	AC220V(50Hz)/AC110V(60Hz)
Dimension	500mm*440mm*230mm
Weight	≤30kg
Max. Power Consumption	≤300W
Operating Temperature	-25~+55℃
Operating Humidity	≤95%
Environmental Class	IP65
RF Connector	N-Female, 50ohm
MTBF	≥100000 hours
Monitor Interface	Local Monitor: RS232 Remote Monitor: UMTS modem

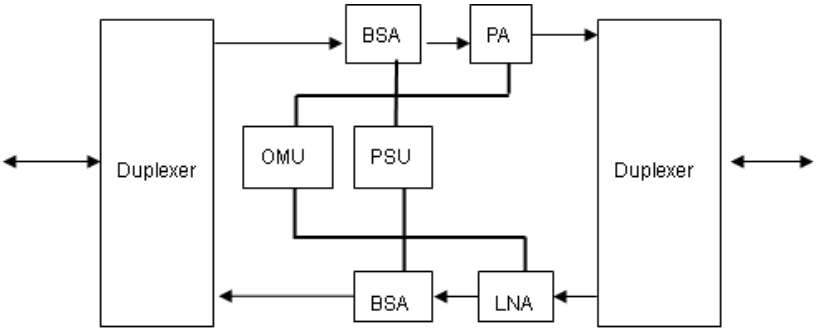
Technical data are subjected to change without notice – File: SUN-LA-D18-FB-XX datasheet 2016V1.0

Sunny Line Amplifier – UMTS2100 Full Band 20/40W

Model: SUN-LA-U21 -FB-XX

Where XX is 20 or 40

System Diagram:



Electrical Specifications

Item	Specification		
	Downlink		Uplink
Frequency Range	2110-2170MHz		1920-1980MHz
Output Power (Max.)	43±2dBm	46±2dBm	0±2dBm
Gain (Max.)	45±3dB	48±3dB	45±3dB (48±3dB for 40W model)
Max. input without damage	10dBm		-10dBm
NF	--		≤5dB
Gain Adjustable Range/Step	≥30dB/1dB		
Gain Adjustable Linear	≤1.0dB @0~20dB ≤1.5dB @21-30dB		
Ripple	≤2dB (3.84MHz)		
Downlink 3rd Order Intercept, OIP3	≥62dBm	≥65dBm	--
EVM	≤12.5%		
PCDE	≤35dB		
ALC	Input Signal add 20dB △Po≤±1		
VSWR	≤1.5		
Time Delay	≤5.0μs		
Spurious Emission	≤-36dBm @9kHz-1GHz ≤-30dBm @1GHz-12.75GHz		
ACLR	≥-45dBc @±5MHz ≥-50dBc @±10MHz		

Power Supply and Mechanical Specifications

Power Supply	AC220V(50Hz)/AC110V(60Hz)
Dimension	500mm*440mm*230mm
Weight	≤30kg
Max. Power Consumption	≤300W
Operating Temperature	-25~+55℃
Operating Humidity	≤95%
Environmental Class	IP65
RF Connector	N-Female, 50ohm
MTBF	≥100000 hours
Monitor Interface	Local Monitor: RS232 Remote Monitor: UMTS modem

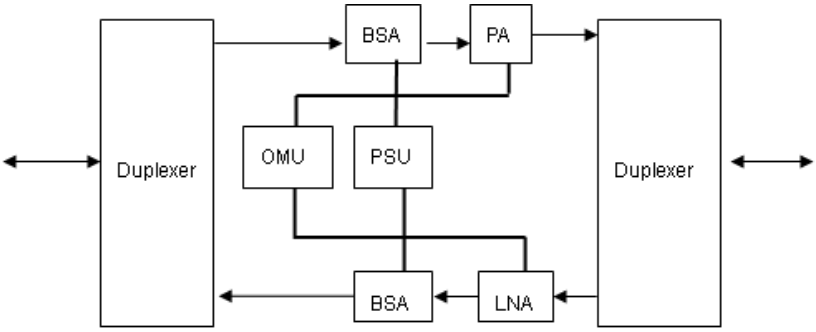
Technical data are subjected to change without notice – File: SUN-LA-U21-FB-XX datasheet 2016V1.0

Sunny Line Amplifier – LTE2600 Full Band 20/40W

Model: SUN-LA-L26 -FB-XX

Where XX is 20 or 40

System Diagram:



Electrical Specifications

Item	Specification		
	Downlink		Uplink
Frequency Range	2620-2690MHz		2500-2570MHz
Output Power (Max.)	43±2dBm	46±2dBm	0±2dBm
Gain (Max.)	45±3dB	48±3dB	45±3dB (48±3dB for 40W model)
Max. input without damage	10dBm		-10dBm
NF	--		≤5dB
Gain Adjustable Range/Step	≥30dB/1dB		
Gain Adjustable Linear	≤1.0dB @0~20dB ≤1.5dB @21-30dB		
Ripple	≤2dB (10MHz)		
Downlink 3rd Order Intercept, OIP3	≥62dBm	≥65dBm	--
ALC	Input Signal add 20dB △Po≤±1		
VSWR	≤1.5		
Time Delay	≤5.0μs		
Spurious Emission	Complies with 3GPP TS 21.143		
Spectrum Mask	Complies with 3GPP TS 21.143		
ACLR	Complies with 3GPP TS 21.143		

Power Supply and Mechanical Specifications

Power Supply	AC220V(50Hz)/AC110V(60Hz)
Dimension	500mm*440mm*230mm
Weight	≤30kg
Max. Power Consumption	≤300W
Operating Temperature	-25~+55℃
Operating Humidity	≤95%
Environmental Class	IP65
RF Connector	N-Female, 50ohm
MTBF	≥100000 hours
Monitor Interface	Local Monitor: RS232 Remote Monitor: UMTS modem

Technical data are subjected to change without notice – File: SUN-LA-L26-FB-XX datasheet 2016V1.0